

What is claimed is:

1. A crystallized Kv channel-interacting protein 1 (KCHIP-1) having one molecule of KCHIP-1 in the asymmetric unit.
2. The crystallized KCHIP-1 of Claim 1, characterized as having space group P4₁2₁2, unit cell parameters of a=b=50.34 Å, c=177.42 Å.
3. A crystallized potassium channel Kv4.3 T1 domain (Kv4.3 T1) having two monomers of Kv4.3 T1 in the asymmetric unit.
4. The crystallized Kv4.3 T1 of Claim 3, characterized as having space group P4₁2₁2, unit cell parameters of a=b=84.23 Å, c=104.99 Å.
5. A three dimensional model of KCHIP-1 defined by the relative structural coordinates for KCHIP-1 according to Figure 4, ± a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5Å.
6. The three dimensional model of Claim 5, wherein the ± a root mean square deviation from the backbone atoms of said amino acids is not more than 1.0Å.
7. The three dimensional model of Claim 5, wherein the ± a root mean square deviation from the backbone atoms of said amino acids is not more than 0.5Å.
8. A three dimensional model of Kv4.3 T1 defined by the relative structural coordinates for Kv4.3 T1 according to Figure 5, ± a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5Å.

9. The three dimensional model of Claim 8, wherein the \pm a root mean square deviation from the backbone atoms of said amino acids is not more than 1.0 \AA .

10. The three dimensional model of Claim 8, wherein the \pm a root mean square deviation from the backbone atoms of said amino acids is not more than 0.5 \AA .

11. A method for identifying an agent that interacts with KCHIP-1, comprising the steps of:

(a) generating a three dimensional model of KCHIP-1 using the relative structural coordinates of KCHIP-1 according to Figure 4, \pm a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 \AA ; and

(b) employing said three-dimensional model to design or select an agent that interacts with KCHIP-1.

12. The method of Claim 11, wherein the \pm a root mean square deviation from the backbone atoms of said amino acids is not more than 1.0 \AA .

13. The method of Claim 11, wherein the \pm a root mean square deviation from the backbone atoms of said amino acids is not more than 0.5 \AA .

14. The method of Claim 11, further comprising the steps of: (c) obtaining the identified agent; and (d) contacting the identified agent with KCHIP-1 in order to determine the effect the agent has on KCHIP-1 activity.

15. A method for identifying an agent that interacts with Kv4.3 T1, comprising the steps of:

(a) generating a three dimensional model of Kv4.3 T1 using the relative structural coordinates of Kv4.3 T1 according to Figure 5, \pm a root mean

square deviation from the backbone atoms of said amino acids of not more than 1.5Å; and

(b) employing said three-dimensional model to design or select an agent that interacts with Kv4.3 T1.

16. The method of Claim 15, wherein the ± a root mean square deviation from the backbone atoms of said amino acids is not more than 1.0Å.

17. The method of Claim 15, wherein the ± a root mean square deviation from the backbone atoms of said amino acids is not more than 0.5Å.

18. The method of Claim 15, further comprising the steps of: (c) obtaining the identified agent; and (d) contacting the identified agent with Kv4.3 T1 in order to determine the effect the agent has on Kv4.3 T1 activity.

19. An agent identified by the method of Claim 11.

20. An agent identified by the method of Claim 15.